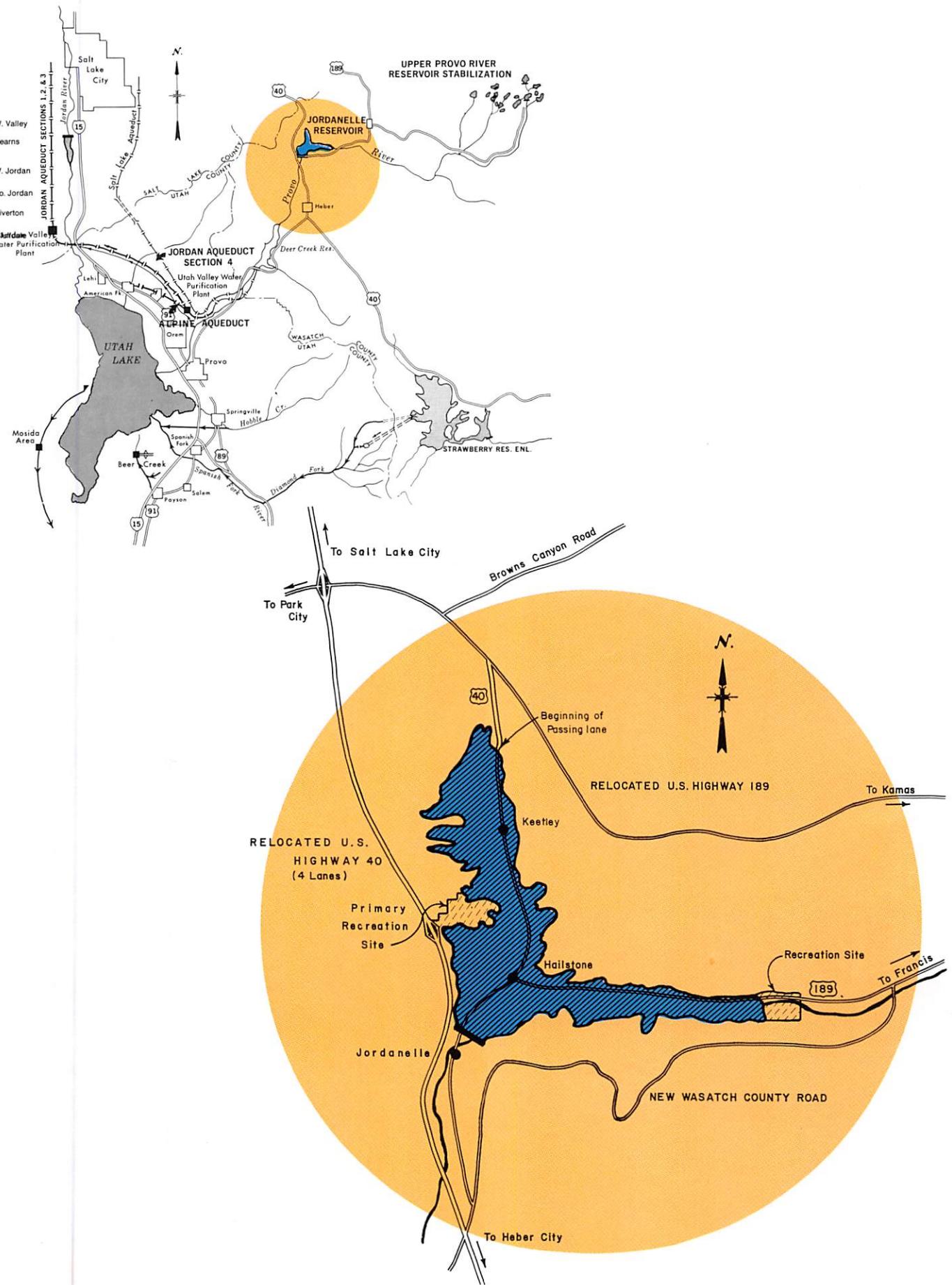


JORDAN DALE

DAM AND RESERVOIR

DESIGN
GEOLOGY
RELOCATION
CONSTRUCTION
FLOOD CONTROL
STABILIZATION
RECREATION





Construction Schedule — Jordanelle Dam and Reservoir

U.S. Highway 40

Award construction contract (southern portion)	Spring 1987
Award construction contract (northern portion)	Fall 1987
Complete construction (flexible surface)	Fall 1989
Complete construction (concrete surface)	Fall 1991

County Road

Award construction contract:	Fall 1987
Award construction contract	Fall 1989
Complete construction	

Highway 189

Award construction contract	Fall 1987
Complete construction	Fall 1989

Jordanelle Dam

Award construction contract - Dam Stage I	Summer 1987
Complete construction - Dam Stage I	Summer 1989
Award construction contract - Dam Stage II	Fall 1989
Complete construction - Dam Stage II	Spring 1992

Summary of Design Data for Jordanelle Dam and Reservoir

Jordanelle Dam

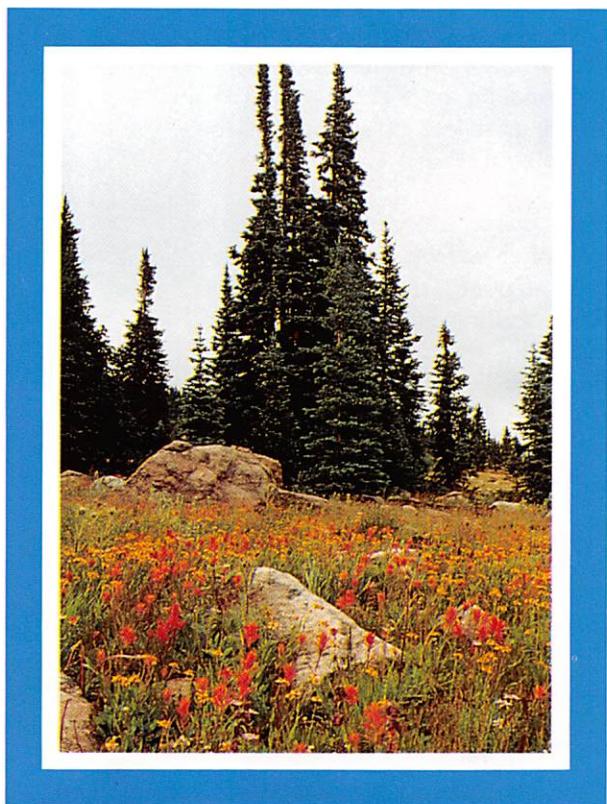
Height	296 feet
Crest length	3,600 feet
Crest width	40 feet
Compacted volume	14,504,000 cubic yards
Volume of material needed before compaction	
Impervious	4,260,000 cubic yards
Pervious	14,728,000 cubic yards
Riprap	150,000 cubic yards
TOTAL	19,138,000 cubic yards

Discharge capacity	3,670 cfs
Outlet works (multilevel)	4,040 cfs
Spillway	

Jordanelle Reservoir

Active capacity	320,100 acre-feet
Conservation and joint use	
Minimum pool	200 acre-feet
TOTAL	320,300 acre-feet

Flood surface capacity	12,800 acre-feet
Surface area	
Top of active capacity	3,068 acres
Top of minimum capacity	37 acres
Top of surcharge capacity	3,141 acres
Average during recreation season	2,097 acres



Jordanelle Reservoir

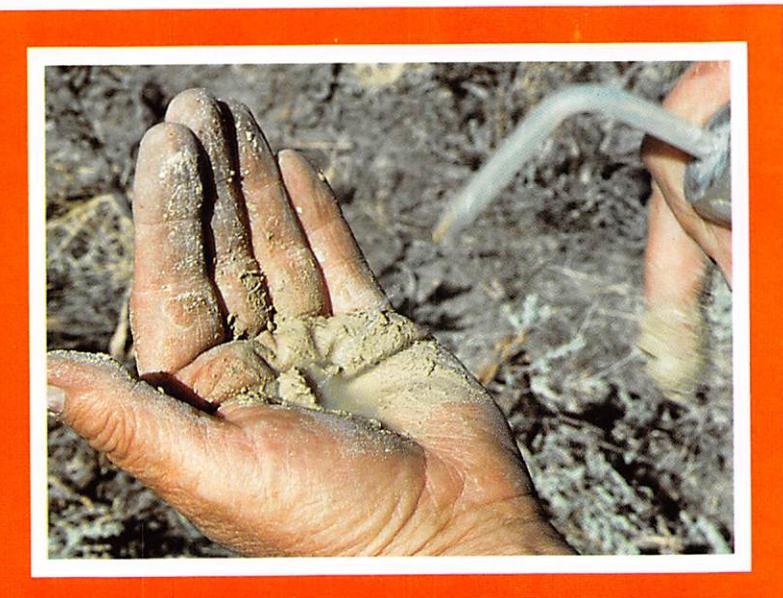
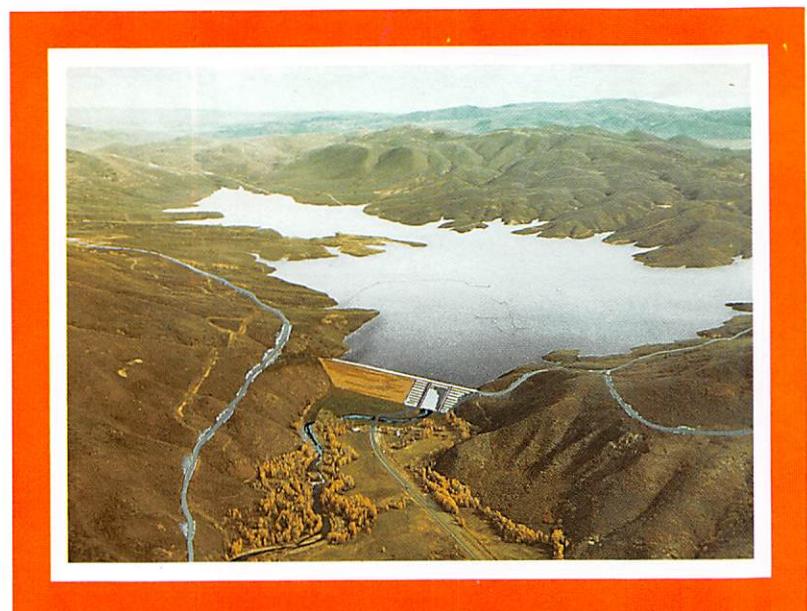
Jordanelle Dam and Reservoir, to be located on the Provo River about 6 miles north of Heber City, is part of the Municipal and Industrial (M&I) System, Bonneville Unit, Central Utah Project (CUP). The CUP is a participating project in the Colorado River Storage Project enacted by Congress in 1956. Construction of the Bonneville Unit was ratified in December 1965 by the citizens in the 12 counties in Utah benefiting from the project. A referendum to amend the original repayment contract for portions of the M&I System was passed by 71 percent within those 12 counties in November 1985.

The Jordanelle Dam and Reservoir will store excess flows of the Provo River and other Provo River flows normally stored in Utah Lake. Utah Lake storage water will be replaced with water diverted from Strawberry Reservoir and from project return flows. Jordanelle Dam will also provide storage for water that is presently regulated by 12 small reservoirs on the headwaters of the Provo River. In addition, under terms of an agreement between the Central Utah Water Conservancy District, Provo City, and the Bureau of Reclamation on February 9, 1987, 10,000 acre-feet of storage will be allocated to Provo City.

M&I water stored in Jordanelle Reservoir will be delivered to Salt Lake County through the Provo River and the buried Jordan Aqueduct, to northern Utah County through the Provo River and the Alpine Aqueduct, and to Wasatch County directly from the reservoir.

Jordanelle Reservoir will be a long-term hold-over reservoir. Under future conditions, assuming similar water years as in the past, the reservoir will hold over through a 10-year drought period. The maximum content will occur during periods of high runoff and the minimum during periods of drought. In simulated operation, the reservoir would have been drawn to minimum water surface elevations only once in the 43-year period (1930 through 1973).

Present planned capacity of Jordanelle Reservoir is about 320,300 acre-feet with a surface area of 3,068 acres. Land to be acquired for construction, wildlife, wetland, and riparian habitat mitigation; and the reservoir management boundary rights-of-way will include an estimated 6,500 acres of privately owned land, 200 acres of state land, and 600 acres of federal land.



Upper Provo River Reservoir Stabilization

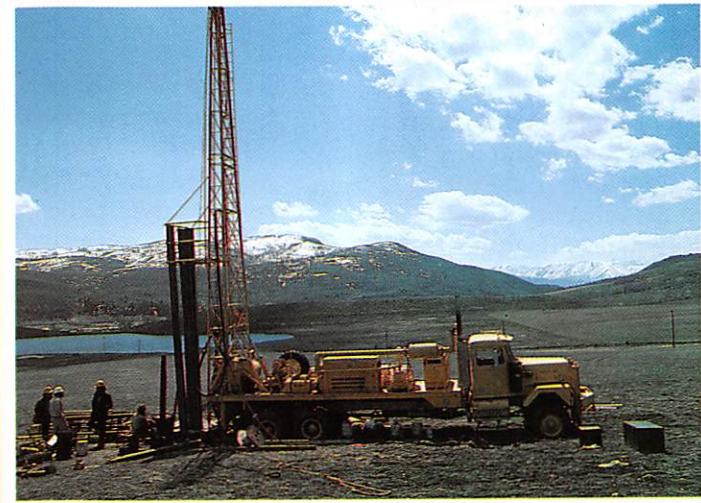
The Upper Provo River area contains many natural lakes, 15 of which have had additional water impounded by dams. These reservoirs have an active capacity of 11,500 acre-feet and provide late season irrigation water for downstream users.

Filling usually occurs through early spring with maximum water surface increases during the months of April and May. Drawdown begins in about July and is completed by late August.

Twelve of these reservoirs will be stabilized to enhance their recreation and fishery value by transferring their irrigation storage to Jordanelle Reservoir. Safety modifications will be made to all 15 structures.

The proposal will allow the remaining three reservoirs to fluctuate in order to provide 1,700 acre-feet of irrigation water to project land located at an elevation too high to permit service from Jordanelle Reservoir. The stabilization program will also provide about 300 acre-feet of water to maintain a fishery flow in a 10-mile reach of the Provo River immediately upstream of Jordanelle Reservoir.

The reservoirs are accessible by road and trail. Six of these lakes are near existing roads, and one additional lake will be served by a new road — according to the Wasatch National Forest transportation plan. Only trail access will be provided to the remaining eight lakes.



Jordanelle Dam Geology — Relocation and Construction

In planning for Jordanelle Dam, seismotectonic studies and detailed site explorations were made at the damsite and within the reservoir basin. Two independent reviews of these studies were conducted. The first, in 1982, concluded that a safe embankment dam can be built at the site provided that additional explorations did not yield unexpectedly unfavorable information.

The second view was conducted in 1986 after additional explorations had been conducted. That group included Dr. Ralph B. Peck, Dr. Walter J. Arabasz, Dr. Douglas Campbell, and Glen S. Tarbox, all internationally recognized earth-science authorities. They concluded that a dam of the proposed size and at the Jordanelle site could be safely constructed. They recommended drilling three additional angle holes at the damsite to obtain conclusive evidence regarding faulting in that area. Five angle holes were drilled in early 1987, and no evidence of faulting at the damsite was found.

In addition, a hydrogeologic evaluation of the proposed Jordanelle Reservoir Basin indicates that there would be little if any impact on adjacent mines caused by seepage from the reservoir. This study was performed by Unitex Corporation.

Jordanelle Dam will be a rock-fill embankment dam constructed with the gravel, cobble, and boulder rock materials found in the Provo River Valley upstream from the damsite. It will rise about 296 feet above streambed with a crest length of about 3,600 feet.

The damsite will be stripped to bedrock to ensure that no nonrock materials remain, thoroughly examined, and treated with filters and dental concrete where needed. After all foundation conditions are verified, final designs and placement of the rock fill will be completed.

In accordance with the 1986 consulting group's recommendations, the dam will be designed to withstand any large magnitude earthquake which may occur in the area including a maximum credible earthquake of Richter scale magnitude 7.5 on the Wasatch Fault (about 19 miles west of the damsite) and magnitude 6.5 for a local random earthquake directly beneath the damsite.

Jordanelle Reservoir, with an eastern arm extending about 5 miles up the Provo River and a northern arm extending about 4½ miles of the tributary Drain Tunnel Creek, will have a total capacity of about 320,300 acre-feet and a corresponding surface area of about 3,068 acres. About 320,100 acre-feet of the total capacity will be active, and the remaining 200 acre-feet will be dead storage. Included in the active capacity will be 6,100 acre-feet of storage space to replace storage in the reservoirs in the Upper Provo River drainage.

The reservoir will also have a surcharge of about 12,800 acre-feet to temporarily store flood inflows until they can be safely discharged through the outlet works and through the outlet works and spillway. No storage space will be allocated for sediments, since they will occupy less than one percent of the normal capacity of the reservoir over a 100-year period.

The construction and operation of Jordanelle Reservoir will require the relocation of portions of U.S. Highways 40 and 189 around the site. The design and construction of these roads will be accomplished by the Utah Department of Transportation in cooperation with the United States Bureau of Reclamation. In addition, a new county road will be constructed south of the reservoir.

A substation owned and operated by the Utah Power and Light Company will be relocated to a site near the downstream base of the dam. Other relocations will include power and telephone lines, natural gas pipelines, 19 residences occupied by about 60 people, two privately-owned ranches, a lounge/cafe, and three small family cemeteries with eight graves. The relocation of the residents with their homes, businesses, and farms will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. A preliminary relocation plan has been developed, and the people who will be affected have been advised of their rights under the Act.

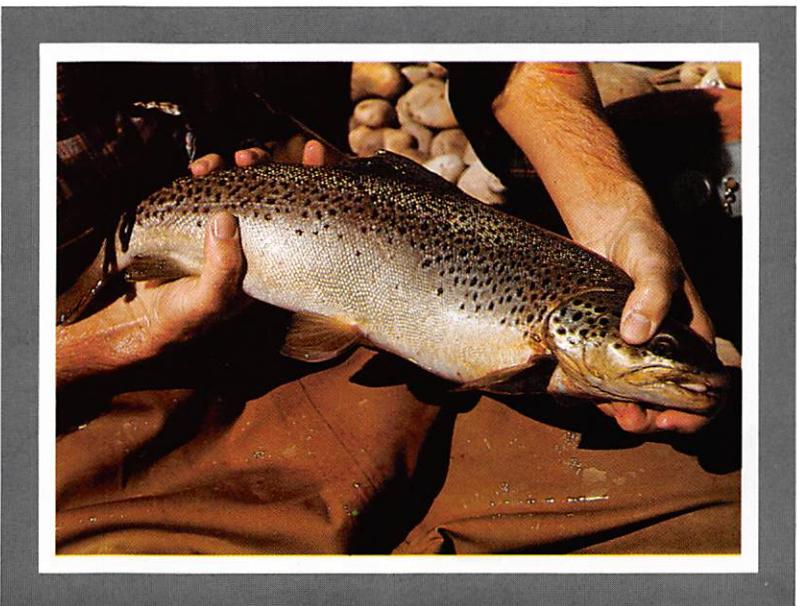
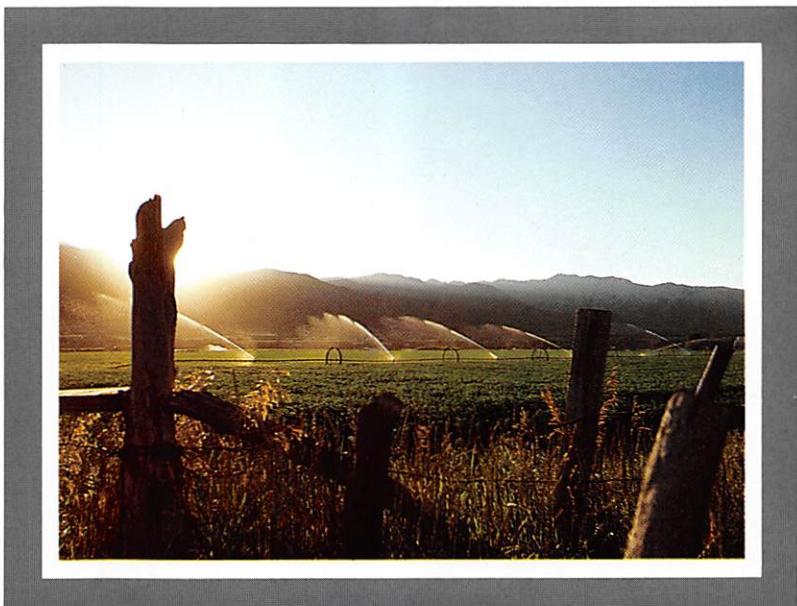
Jordanelle Dam Flood Prevention

High water levels in Utah Lake will be regulated by control of Provo River inflows at Jordanelle Dam during high runoff years. Since all but the high runoff water is appropriated by downstream users, water impounded by Jordanelle Dam will be replaced in Utah Lake by Strawberry Reservoir water and return flows. However, during wet periods when the lake is projected to spill into the Jordan River, import water from Strawberry Reservoir would not be released to the lake.



Recreation

Recreation facilities at Jordanelle Reservoir will accommodate up to 5,000 people. Two recreational areas will be constructed. One will be located on the west shore and the other at the tip of the eastern arm near rock cliffs. Facilities will include camping and picnicking units, fish cleaning stations, boat launching ramps, car and trailer parking, electrical hookups, restrooms, and drinking water developed from nearby wells. In addition, 100 acres have been set aside for future recreational development at the upper end of the north arm if the need should arise.



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